**LEARNING TO UNDERSTAND:
LATEST CONTRIBUTIONS ABOUT EPISTEMIC TRUST AND MENTALIZATION-RELATED CONCEPTS**

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The catcher in the mind: validation of the brief-mentalized affectivity scale for adolescents in the Italian population

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ABSTRACT

The concept of mentalized affectivity (MA) encompasses the dimensions of identifying, processing, and expressing emotions and describes the process of making sense of and reevaluating one's affects in light of autobiographical memory. This construct was developed within the theoretical framework of mentalization and, due to its interpersonal nature, added further complexity to the emotion regulation construct. This research aimed to examine the factor structure and psychometric properties of the Brief-Mentalized Affectivity Scale for adolescents (B-MAS-A) on an Italian sample of young people (aged 13-19 years). Data were collected using non-probabilistic sampling and an online survey. Participants were asked to complete a large battery of instruments, including the B-MAS-A, the Toronto Alexithymia Scale, the Reflective Functioning Questionnaire, the Epistemic Trust, Mistrust, and Credulity Questionnaire, the Strengths and Difficulties Questionnaire, and the General Self-Efficacy Scale. In study 1, factor analyses carried out on a total sample of 566 adolescents identified 3 distinct dimensions of the same components of MA found in the adult population: i) identifying; ii) processing; iii) expressing emotions. The subscales showed excellent internal consistency. Study 2 (involving a subsample of 288 participants) demonstrated good levels of construct and criterion validity. These results confirm that the B-MAS-A represents a valid and robust instrument for assessing the complex and multifaceted characteristics of MA in adolescents. The B-MAS-A can make a significant contribution to clinical practice and research and encourage systematic studies on MA in psychotherapy, taking into account the developmental stage of adolescence.

Key words: mentalized affectivity, adolescence, B-MAS-A, reflective functioning, epistemic trust.

Introduction

The concept of mentalized affectivity (MA) brings a unique perspective to emotion regulation theory by considering its interplay with mentalizing processes, through which individuals

interpret the meaning of their own and others' actions based on intentional mental states, such as desires, feelings, and beliefs (Bateman & Fonagy, 2004). MA has been defined by Jurist (2018) as "the process of making sense of emotions in light of one's autobiographical memory and history". Thus, it describes not only the ability to recognize and regulate emotions but also to reevaluate their meaning, considering how prior and present contexts may influence emotional processes and how they may shape future experiences (Greenberg *et al*., 2017). Hence, in this framework, MA theory highlights the importance of interpersonal relationships, significantly emphasizing the social nature of affects. The construct also underlines how our affective lives are linked to other crucial aspects of psychological well-being such as curiosity, empathy, and cognitive flexibility, which can promote the development of more adaptive representations of oneself and others (Liotti *et al*., 2021).

This capacity involves 3 aspects, considered part of a concentric process: identifying, modulating (processing), and expressing emotions. "Identifying" involves the ability to make sense of emotions in light of one's personal history, to label them, and to explore their meaning; "processing" involves regulating emotions and modulating them in terms of duration or intensity; "expressing" describes the ability to communicate thoughts and feelings both inwardly and outwardly in an agentic manner (Greenberg *et al.*, 2021).

MA appears as a key concept within the broader theoretical framework of mentalization, as it integrates and enriches the investigation of similar constructs such as emotional regulation, emotional intelligence, and alexithymia, bringing unique complexity to the study of our emotional experience. For instance, several authors have pointed out similarities between alexithymia and MA, as both refer to deficits in the identification, awareness, and processing of emotions (Jurist, 2018). However, alexithymia only covers some facets of MA and does not take into account how past and present experiences affect emotion regulation (Greenberg *et al.*, 2017). Hence, it has been argued that measures of alexithymia, such as the Toronto Alexithymia Scale (TAS-20) (Bagby *et al.*, 1994), capture some aspects of MA. In the original validation of the Brief-Mentalized Affectivity Scale (B-MAS) (Greenberg *et al*., 2021), all dimensions of alexithymia except one were negatively correlated with the three B-MAS subscales, indicating a correspondence between the 2 constructs. However, the authors found a strong correlation between the subscale "difficulty in identifying feelings" of the TAS-20 and the "processing" factor of the B-MAS, not the "identifying" one, as previously expected. This result led to the conclusion that identifying affects in the MA framework does not refer only to labeling them and comprehending their origin but encompasses a contextualization of emotions in one's life experiences. Thus, despite the affinities, some aspects of these concepts are markedly different.

MA seems to be a particularly relevant construct for clinicians, as all forms of psychotherapy focus on patients' emotional suffering as well as on their capacity to reflect on their affective experiences throughout the healing process. According to Jurist (2018), in the context of therapy, MA is closely connected with the concept of epistemic trust, defined as the ability to adaptively trust interpersonally communicated knowledge and to consider it relevant to oneself and generalizable, opening the individual to social learning (Fonagy & Allison, 2014). A good level of epistemic trust ensures collaboration between therapist and patient and is necessary for mentalization processes to flourish. Hence, the mentalizing skills vital to working on MA in therapy are fundamentally intertwined with a trustful epistemic stance, which involves characteristics such as flexibility, curiosity, and self-reflexivity.

Although exploring MA dimensions in adolescents could provide clinicians with a more comprehensive perspective on emotional development during this particular life stage, MA has typically been studied in adult samples. The importance of understanding how MA dimensions might influence both the psychopathological expression and the therapeutic process has already been highlighted in the *Psychodynamic Diagnostic Manual, 2nd edition* (PDM-2) (Lingiardi & McWilliams, 2017). The PDM-2 describes the ability to identify, regulate, and express emotions as one of the fundamental mental capacities that clinicians must consider to better understand the patient's suffering, discerning their expression in adolescence from those of other developmental phases. Indeed, these abilities tend to increase significantly and become more complex during adolescence. Cognitive and inhibitory control, working memory, abstract reasoning, decision-making, and perspective-taking (Dow-Edwards *et al*., 2019; Dumontheil, 2014) tend to strengthen with age, thanks to the maturation of several brain structures and the richer social and interpersonal experiences that characterize adolescence. This life stage also represents a transitional period marked by the arduous and multifaceted process of separation-individuation (for a review, see Koepke & Denissen, 2012). Adolescents must respond to new, more complex challenges in almost all facets of their lives, both at the biological and psychological levels. This makes them exceptionally more vulnerable to various forms of psychopathology, especially those characterized by heightened emotionality and social sensitivity, referred to as "socio-emotional disorders" (Rapee *et al*., 2019). Throughout these progressive changes, good MA skills may act as a protective factor in adverse scenarios, playing a crucial role in the development of interpersonal relationships and in the intrapersonal connection with one's emotional life. The literature on emotional regulation and intelligence in adolescence has highlighted that the latter is negatively associated with psychological distress (*e.g*., internalizing problems, depression, and anxiety) and positively associated with better-coping strategies (Resurrección *et al*., 2014) and subjective well-being (Llamas-Díaz *et al*., 2022). Moreover, disruptions in emotional regulation are associated with anxiety and depression and appear to represent a predictive risk factor for future psychopathology (Young et al., 2019). Moreover, disruptions in emotional regulation are associated with anxiety and depression and appear to represent a predictive risk factor for future psychopathology (Young *et al.*, 2019). According to Brenning *et al.* (2022), the ability to regulate affective states can be considered a transdiagnostic element underlying both internalizing and externalizing symptoms in adolescents. Similarly, mentalizing capacities, another crucial aspect of MA, have been linked with both externalizing (Fonagy & Luyten, 2018) and internalizing difficulties (Bizzi *et al*., 2019) during this stage of development. Literature has also shown that significant impairments in mentalization abilities are a predictive factor for the onset of psychosis among adolescents and young adults (Boldrini *et al*., 2020). Both emotional regulation and mentalizing skills, pivotal elements in the development of MA's adequate capacities, undergo significant improvements during adolescence, as literature has shown that they tend to improve with age (Malberg *et al*., 2023; Poznyak *et al.*, 2019; Zimmerman & Iwanski, 2017).

Research has also highlighted the presence of significant

gender differences for most emotion regulation strategies as well as regarding emotional intelligence (Gómez-Baya & Mendoza, 2018; Zimmerman & Iwanski, 2017). Thus, having an instrument that can briefly and reliably assess the ability to identify, regulate, and express emotions during adolescence seems essential to better understand the development and maintenance of a wide range of psychopathological disorders, as well as the interaction between these elements and gender, age, and other aspects of psychological functioning. This, in turn, can support clinicians working with teenage patients in formulating more individualized and effective treatment plans.

Other measures have been developed to assess MA, such as the mentalized affectivity scale (Greenberg *et al*., 2017), and the B-MAS, which have already been validated in English (Greenberg *et al*., 2021), Italian (Liotti *et al*., 2021), and Persian (Sayarfard *et al*., 2021), but only with adult samples.

Aims and hypotheses

The overall aim of the present research was to validate the B-MAS for adolescents (B-MAS-A) in the Italian population. Since MA is intertwined with the constructs of mentalization, epistemic trust, and alexithymia, all these variables were considered in the development of this empirical investigation. Specifically, we conducted two studies. Study 1 aimed to test the factor model of B-MAS-A using principal component analysis (PCA) and confirmatory factor analysis (CFA). We expected to extract 3 factors reflecting the 3 dimensions of MA: identifying, processing, and expressing emotions. Additionally, we verified the reliability of these subscales, expecting excellent levels of internal consistency, as found in the original (Greenberg *et al*., 2021) and Italian (Liotti *et al*., 2021) validations of the B-MAS. Study 1 also aimed to investigate the potential effects of gender and age on the different subscales of the B-MAS-A. More specifically we expected male participants to have higher scores on the processing subscale than female adolescents. Expected gender differences are based on prior empirical research on MA, as in both studies by Greenberg *et al*. (2017) and Liotti *et al*. (2021) males reported significantly higher capacities in processing emotions, compared to female participants. In addition, we hypothesized that the scores obtained in the 3 subscales would be significantly different based on the participants' age, with older adolescents obtaining higher scores than younger ones.

Study 2 aimed to explore the validity of the B-MAS-A, assessing associations between its subscales and other mental functioning capacities, such as alexithymia, mentalization (or reflective functioning) abilities, epistemic trust and its disruptions, levels of psychological and behavioral resources and difficulties, as well as perceived self-efficacy, which resulted in a positive correlation to MA dimensions in the study of Rinaldi *et al*. (2021). We hypothesized that all subscales of the B-MAS-A would show positive associations with reflective functioning and negative relationships with alexithymia, showing good construct validity. Regarding criterion validity, we expected a positive association between epistemic trust and the ability to identify, process, and express emotions; conversely, we hypothesized that all the subscales of the B-MAS-A would be negatively correlated with epistemic mistrust and credulity. Lastly, we anticipated positive correlations between MA dimensions and perceived self-efficacy, as well as negative associations with severe levels of psychological and behavioral problems.

Methods

Procedure and participants

The research project was approved by the Ethics Committee of the Department of Dynamic and Clinical Psychology, and Health Studies, Sapienza University of Rome. Data were collected between September and December 2022 through an online survey using the Qualtrics platform (Seattle, WA, USA). Participants were recruited through various high schools in Italy, mainly in northern and central cities. School administrators were asked about their participation in the study; principals and teachers informed parents and students about the research to obtain informed consent, explaining that their participation would be anonymous and voluntary, that all responses would be kept confidential, and that the participants could stop compiling the survey at any time. Some of the authors supervised the data collection sessions at the high schools.

To meet the inclusion/exclusion criteria, participants were required to: have adequate knowledge of the Italian language; be aged between 13 and 19 years old; and not present an intellectual disability or neuropsychiatric disorder. A total of 97 out of 663 participants were excluded based on these criteria (especially 6% due to age and language and 9% due to intellectual disabilities or neuropsychiatric disorders). The total sample was composed of 566 adolescents aged 13 to 19 years old [mean=16.59, standard deviation (SD)=1.62]. Of these, 244 were males (43.1%), while 322 were females (56.9%). All participants provided complete data. There were no missing data; thus, we did not exclude any participants from the study. All adolescents were Italian. The global sample used in study 1 was divided by developmental stages: early adolescence (249; 44.0%; age range 13-16) and late adolescence (317; 56.0%; age range 17-19). The subgroup involved in study 2 included 288 adolescents; of these, 142 were males (49.3%), while 146 were females (50.6%); the mean age was 15.92 years (SD=1.58). Most of the sample came from central Italy, and a small percentage was from the north of Italy.

Measures

Sociodemographic questionnaire

Participants' socio-demographic information (such as age, gender, sexual orientation, and nationality) was collected. Some questions on mental health problems (*e.g*., "have you ever suffered from emotional/psychological disorders before?") and psychotherapy experience (*e.g*., "are you currently in therapy?") were also asked.

Brief-Mentalized Affectivity Scale for Adolescents

The B-MAS-A (Greenberg *et al*., 2021; Liotti *et al*., 2021) is a 12-item self-report measure developed based on the B-MAS for adults. It assesses MA, a form of affect regulation that entails revaluing, not just modulating, affective experience (Jurist, 2018). Items are assessed on a 7-point Likert scale, ranging from 1 ("strongly agree") to 7 ("strongly disagree"). Example items include: "I rarely think about the reasons behind why I am feeling a certain way"; "I often keep my emotions inside"; and "it is hard for me to manage my emotions". The original factor structure of B-MAS identified 3 dimensions: identifying emotions, or the capacity to name basic emotions and to make sense of them (*e.g*., "I try to understand the complexity of my emotions"; "I often look back at my life history to help inform my current emotional state

and situation"); processing emotions, or the capacity of modulating, managing, and tolerating them (*e.g.*, "I am good at distinguishing between different emotions that I feel"; "When I am filled with a negative emotion, I know how to handle it"); and expressing emotions, or the ability to communicate one's feelings (*e.g.*, "if I feel something, I will convey it to others"; "people tell me I am good at expressing my emotions"). All the subscales showed excellent psychometric properties in adult populations (Greenberg *et al.*, 2017; Liotti *et al.*, 2021). Higher scores in the subscales indicate greater abilities in MA. This measure has achieved good levels of reliability, with Cronbach's a values ranging from .69 to .81 (cf., Liotti *et al*., 2021).

Epistemic Trust, Mistrust and Credulity Questionnaire

The Epistemic Trust, Mistrust and Credulity Questionnaire (ETMCQ) (Campbell *et al*., 2021) is a 15-item self-report questionnaire that assesses 3 epistemic stances, that is, trust, mistrust, and credulity. Items must be assessed according to a Likert-scale type response, ranging from 1 ("strongly agree") to 7 ("strongly disagree"). Epistemic trust has been defined as an adaptive attitude towards interpersonally transmitted knowledge, considering that it enables openness to social learning (*e.g.*, "I usually ask people for advice when I have a personal problem"). Epistemic mistrust reflects a stance in which the person tends to consider untrustworthy or ill-intentioned any source of information, precluding the possibility of benefiting from the social environment (*e.g.*, "if you put too much faith in what people tell you, you are likely to get hurt"). Epistemic credulity pertains to a "naïve" if not blind trust in other people, characterized by a lack of vigilance and discrimination; highly credulous people may be vulnerable to misinformation and exploitation (*e.g.*, "I am often considered naïve because I believe almost anything that people tell me"). Higher scores in each domain indicate a higher level of the relative trait for each scale. In the present study, we used the Italian version of the measure, validated by Liotti *et al*. (2023). The scales of the ETMCQ showed good reliability, with Cronbach's a values ranging from .67 to .72 (cf., Liotti *et al*., 2023).

Reflective Functioning Questionnaire

The Reflective Functioning Questionnaire (RFQ) (Fonagy *et al*., 2016) is an 8-item self-report instrument designed to evaluate mentalization, namely the ability to understand and interpret, both implicitly and explicitly, one's own and others' behaviors in terms of mental states (*e.g.*, desires, intentions, thoughts, and feelings). For each item, participants express their level of agreement on a 7-point Likert scale, ranging from 1 ("completely disagree") to 7 ("completely agree"). Example items include "people's thoughts are a mystery to me" and "strong feelings often cloud my thinking". In the present study, we used a 6-item version of the original RFQ, since Bizzi *et al.* (2022) found that, in a sample of Italian adolescents, the 6-item RFQ model showed a better fit and higher internal consistency with respect to the original one. The score of the RFQ is divided into 2 subscales: one that measures certainty (RFQ-C) and one that assesses uncertainty (RFQ-U) about mental states. The reliability of the instrument showed excellent values in all subscales (Cronbach's a between .81 and .89) (cf., Bizzi *et al*., 2022).

Toronto Alexithymia Scale

The TAS-20 (Bagby *et al*., 1994) is a 20-item self-report questionnaire developed to assess alexithymia, that is, the inability to identify and describe emotions experienced by oneself or others. Example items include "it is difficult for me to find the right words for my feelings"; "I am often confused about what emotion I am feeling"; "being in touch with emotions is essential". Items are rated on a 5-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"). The construct is composed of a multivariate set of dimensions, which are reflected by the three subscales of the measure: difficulty in identifying feelings, difficulty in describing feelings, and externally oriented thinking. These characteristics may be the expression of a deficit in cognitive processing and the regulation of emotions. In this study, we used the Italian version of the questionnaire (Bressi *et al*., 1996). The reliability of the instrument showed excellent values in all subscales (Cronbach's a between .81 and .89) (cf., Bizzi *et al*., 2022).

General Self-Efficacy Scale

The General Self-Efficacy Scale (GSE) (Schwarzer & Jerusalem, 1995) is a 10-item self-report questionnaire developed to assess a general sense of self-efficacy and designed for adolescents and adults. Items are valued on a 5-point Likert-type scale, ranging from 1 ("strongly disagree") to 5 ("strongly agree"). A typical item is, "thanks to my resourcefulness, I can handle unforeseen situations". Self-efficacy refers to the ability to cope with adversity, to the perceived efficacy with respect to performance difficulty, and to a sense of global competence in facing problems. The scale presented high reliability, stability, and construct validity in earlier studies. For this research, we used the Italian adaptation of the GSE, developed by Sibilia *et al*. (1995). Cronbach's a values for the GSE subscales ranged between .79 and .90 (cf., Ronconi *et al*., 2018).

Strengths and difficulties questionnaire

The strengths and difficulties questionnaire (SDQ) (Goodman, 2001) is one of the most used instruments to measure psychological adjustment in children and adolescents (from 3 to 17 years old), specifically self-reported emotional and behavioral symptoms. Example items include "I am considerate of others"; "I am restless"; "I worry a lot"; "I get very angry"; and "I have at least one good friend". The questionnaire consists of 25 items that reflect positive and negative attributes; respondents use a 3-point Likert scale and can answer "not true", "somewhat true", or "certainly true". Items are divided into 5 scales, generating scores for emotional symptoms, conduct problems, hyperactivity-inattention, peer problems, and prosocial behavior. The first 4 subscales are summed to generate a macro dimension, that is, the total difficulty score. The other two macro dimensions are externalization (conduct problems and hyperactivity) and internalization (emotional symptoms and peer problems). The "prosocial behavior" subscale assesses the propensity to establish healthy and cooperative peer relationships, an aspect that the literature has described as being associated with better psychological adjustment and functioning, especially during adolescence (Crone & Achterberg, 2022). The SDQ showed satisfactory reliability and validity based on studies of community and clinical samples. The Italian version used in this study has been validated by Di Riso *et al*. (2010), and Corvasce *et al*. (2022) used the measure on an adolescent sample. The questionnaire showed good reliability, cross-informant correlation, and test-retest stability. Cronbach's a was .70 (cf. Di Riso *et al*., 2010).

Data analysis

All statistical analyses were performed using the IBM SPSS Statistics software version 27.0 (Armonk, NY, USA) and LISREL 8.8 (Jöreskog & Sörbom, 2006). Data were tested for normality (skewness and kurtosis) before performing the statistical analyses, and descriptive statistics were carried out as well.

The main purpose of study 1 (which involved a total sample of 566 adolescents) was to verify the factor model of the B-MAS-A. We replicated the research of Greenberg *et al.* (2021) by performing PCA; however, a promax (oblique) rotation was chosen because, compared to varimax rotation, it implies the absence of the hypothesis of orthogonal factors; when studying complex psychological constructs such as MA, correlations between the various subscales are expected (Fabrigar *et al*., 1999). The PCA was conducted on data gathered from the first half (n=283) of the global sample (n=566). A random splitting method was used to divide the total sample into 2 halves, and the commonality ratio index (S) was run, taking into account that the closer it is to 1.0, the more equivalent the 2 subsamples are (Lorenzo-Seva, 2022). The number of factors to be extracted from PCA was determined taking into account Kaiser-Meyer-Olkin criteria >.6, Bartlett's test of sphericity <.05, Kaiser's criteria eigenvalues >1, the scree plot, the percentage of variance accounted for by the factor solution, and its interpretability.

To test the adequacy of the factor structure of the B-MAS-A obtained by using the PCA, a CFA was performed on the other half of the adolescent sample (n=283). The goodness of the model was estimated by multiple fit indexes and their cutoff thresholds: the root mean square error of approximation (RMSEA) ≤.06, the standardized root mean square residual (SRMR) ≤.08, the comparative fit index (CFI) ~.95, non-normed fit index (NNFI) ≥.95 (Hu & Bentler, 1999).

In study 1, the internal consistencies of all the subscales of the B-MAS-A were examined using Cronbach's a reliability coefficients calculated on the total sample (n=566). Notably, Cronbach's a coefficients of .7 indicate an acceptable level of reliability, while coefficients of .8 or greater indicate an excellent level (Streiner, 2003). The potential impact of gender and age on all dimensions of MA was also tested using a multivariate analysis of variance (MANOVA) in which age, gender, and their interaction were independent variables while the B-MAS-A subscales were dependent variables. To perform this analysis, the total sample (n=566) was divided into 2 age groups, early adolescents (13-16 years) and late adolescents (17-19 years), to detect differences between younger and older participants with respect to the various components of MA. To interpret the effect size, we considered the following eta squared values (η^2):η^2>.01 = small effect; η^2>.06 = medium effect; and η^2>.14 = large effect (Miles & Shevlin, 2001).

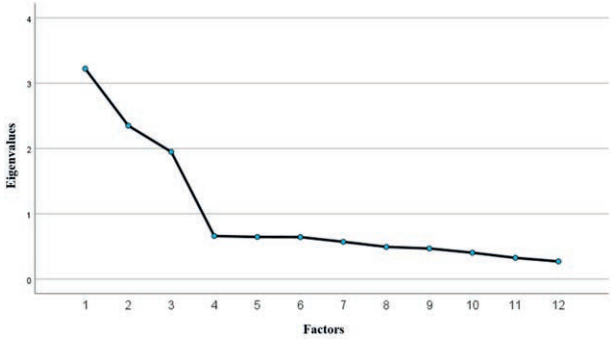

Figure 1. Scree plot.

The purpose of study 2 (which involved a subsample of 288 adolescents) was to examine the validity of the B-MAS-A dimensions. Regarding construct validity, partial correlations (partial r, 2-tailed) were performed between all dimensions of MA, alexithymia (assessed with the TAS-20), and reflective functioning (assessed with the RFQ), controlling for the effects of age and gender in all the analyses. The criterion validity of the B-MAS-A was also investigated by carrying out the partial correlations between all subscales of the MA (identifying, processing, and expressing emotions) and different mental functioning capacities: epistemic trust and its disruptions, *i.e*., mistrust and credulity (assessed with the ETMCQ), general sense of self-efficacy (assessed with the GSE), and psychological adjustment related to specific emotional and behavioral symptoms (assessed with the SDQ). Even in these partial correlations, the effects of age and gender were removed.

Results

Study 1

The brief-mentalized affectivity scale for adolescents: factor structure and psychometric properties of its subscales

PCA was performed on the data provided by 283 adolescent participants. This subsample was considered adequate, taking into account the Kaiser-Meyer-Olkin (Tabachnick & Fidell, 2007) score of .76, and the statistical significance of Bartlett's test of sphericity, χ^2=1083; p<.001. Moreover, it was equivalent to the subsample used for CFA, considering that S was .99. PCA identified a 3-factor solution (Figure 1) accounting for 60.4% of the total variance, with factors ranging from 28.38% to 13.37% and high item factor loadings (.47≤λ≤.91).

Table 1 illustrates the factor structure of the B-MAS-A, showing specific items for each of the three dimensions of MA: identifying, processing, and expressing emotions. These components overlapped with those found in factor analyses conducted on adult populations (Greenberg *et al*., 2021; Liotti *et al*., 2021). The first factor, labeled processing, included items describing the individual's ability to modulate emotions; the second factor, labeled identifying, included items describing the degree of self-perceived awareness of one's emotions; and the last factor, labeled expressing, included items describing the individual's capacity to express and communicate emotions both outwardly and inwardly. It is important to note that the signs of the loadings (or factorial weights) of the items included in the expressing factor have been reversed to facilitate the interpretability of this subscale. Therefore, the expressing subscale overlaps with that of the original version of the B-MAS (Greenberg *et al*., 2021).

CFA was performed on data from the other half of the total sample (n=283). According to the criteria recommended by Hu & Bentler (1999), all fit indices confirmed the good adequacy of the 3-factor model resulting from the PCA: χ^2(51)=106.94; p<.001; RMSEA=.06; SRMR=.06; CFI=.96; NNFI=.95.

Cronbach's α coefficients assessed in the full sample of adolescents (n=566) showed excellent/good values (Streiner, 2003): identifying (α=.70), processing (α=.80), and expressing emotions (α=.81). Finally, intercorrelations among the 3 factors of B-MAS-A ranged from .02 to .24.

The MANOVA revealed a statistically significant effect for gender, Wilks's λ=.894; F(3, 560)=22.139; p<.001; η^2=.106, age, Wilks's λ=.929; F(3, 560)=14.193; p<.001; η^2=.071, and their interaction, Wilks's λ=.966; F(3, 560)=6.595; p<.001; η^2=.034, on the B-MAS-A dimensions. More specifically, gender had a significant effect on the identifying, F(1, 565)=16.045, p<.001, and processing, F(1, 565)=45.846, p<.001 subscales, but not with respect to the expressing one, F(1, 565)=.418, p=.52. Moreover, the Identifying subscale differed significantly by age, F(1, 565)=40.184, p<.001, whereas no differences were found for the processing, F(1, 565)=1.185, p=.28, and expressing, F(1, 565)=.345, p=.56 subscales. Finally, the interaction between gender and age has a significant effect on the B-MAS-A subscales processing, F(1, 565)=5.257, p=.02, and expressing, F(1, 565)=18.139, p<.001, but not on the identifying subscale, F(1, 565)=.546, p=.46.

Table 2 shows the means and SD of the B-MAS-A subscales: identifying, processing, and expressing. In particular, female adolescents tended to show higher scores on the identifying dimension than male adolescents, who reported higher levels on the processing subscale. Significant differences by age were also found in the identifying subscale; in particular, older adolescents showed higher scores on the identifying dimension than younger participants. The interaction effect of age and gender was also found to be significant: male adolescents (both younger and older) had higher scores on the processing dimension than female participants. Conversely, on the expressing subscale, male early adolescents tended to have higher scores than female early adolescents, while female late adolescents had higher scores than male late adolescents.

Study 2

Mentalized affectivity and other dimensions of mental functioning: validity of the brief-mentalized affectivity scale for adolescents

Construct and criterion validity were tested by examining the potentially systematic relationships between all subscales of the

Table 1. Factor Structure of the brief-mentalized affectivity scale for adolescents (n=283). The highest loadings for each item are highlighted in italics.

	λ 1	2	3
Factor 1. Processing			
8. I am good at controlling my emotions	*.83*	–.05	–.09
2. When I am filled with a negative emotion, I know how to handle it	*.85*	–.04	.02
5. It is hard for me to manage my emotions	*–.72*	.24	.19
11. I am good at distinguishing between different emotions that I feel	*.64*	.23	–. 05
Factor 2. Identifying			
7. I try to understand the complexity of my emotions	.13	*.82*	.07
4. I often look back at my life history to help inform my current emotional state and situation	–.03	*.76*	.12
1. I try to put effort into identifying my emotions	–.10	*.73*	–.08
10. I rarely think about the reasons behind why I am feeling a certain way	.02	*–.47*	.12
Factor 3. Expressing			
6. If I feel something, I prefer not to discuss it with others	.09	–.04	*–.91*
9. If I feel something, I will convey it to others	–.07	–.01	*.86*
12. I often keep my emotions inside	–.07	–.01	*–.78*
3. People tell me I am good at expressing my emotions	.22	.11	*.53*

[a]All signs of the loadings (or factorial weights) of the 4 items included in this factor have been reversed to facilitate the interpretability of the expressing scale and so that the scale overlaps with the expressing scale included in the original version of the brief-mentalized affectivity scale (Greenberg *et al.*, 2021).

Table 2. Means and standard deviations of subscales of the brief-mentalized affectivity for adolescents (n=566).

	Gender	Age	M	SD
Identifying	Male	Early adolescence	4.56	1.12
		Late adolescence	5.09	1.24
	Female	Early adolescence	4.87	1.21
		Late adolescence	5.55	.96
	Male and female	Early and late adolescence	5.09	1.18
Processing	Male	Early adolescence	4.46	1.40
		Late adolescence	4.07	1.48
	Female	Early adolescence	3.41	1.32
		Late adolescence	3.56	1.21
	Male and female	Early and late adolescence	3.82	1.40
Expressing	Male	Early adolescence	3.46	1.34
		Late adolescence	3.01	1.36
	Female	Early adolescence	2.86	1.38
		Late adolescence	3.45	1.50
	Male and female	Early and late adolescence	3.20	1.42

M, mean; SD, standard deviation.

B-MAS-A and various dimensions of adolescent mental functioning: alexithymia (assessed using the TAS-20), mentalization (assessed using the RFQ), epistemic trust, mistrust, and credulity (assessed using the ETMCQ), general self-efficacy (assessed using the GSE), and specific emotional and behavioral symptoms reflecting adolescents' psychological adjustment (assessed using the SDQ). Partial correlations were performed among all these variables, controlling for the effects of age and gender (Table 3).

Overall, the results seem to confirm the good construct validity of the B-MAS-A in the adolescent population. Consistent with the study hypotheses, all components of the B-MAS-A were negatively correlated with the total alexithymia index. Low scores on the processing and expressing subscales were strongly related to severe difficulties in identifying and describing feelings. The processing subscale was also found to be positively related to certainty about mental states (RFQ-C) and negatively associated with uncertainty about mental states (RFQ-U).

The findings shown in Table 3 also seem to indicate a high level of criterion validity for the B-MAS-A. Examining the partial associations in more detail, it is important to note that the identifying, processing, and expressing subscales were positively correlated with epistemic trust, while the processing and expressing subscales were found to be negatively and strongly associated with epistemic mistrust. Moreover, the processing and expressing subscales were strongly and positively related to a global sense of self-efficacy. Finally, all B-MAS-A subscales were negatively related to several SDQ subscales describing adolescent behavioral difficulties and adjustment problems (both internalizing and externalizing); conversely, the identifying and expressing subscales were positively associated with the SDQ prosocial behavior scale, which describes adolescents' strengths and resources in interpersonal contexts.

Discussion

The primary aim of this study was to validate the B-MAS-A in the Italian population. Results from factor analyses confirmed the presence of 3 main components within MA: processing, expressing, and identifying emotions (Table 1). These dimensions were first proposed at a theoretical level by Jurist (2018) and subsequently empirically validated in both the U.S. (Greenberg *et al.*, 2021) and Italian (Liotti *et al*., 2021) adult populations. In the present study, the 3 factors of B-MAS-A collectively accounted for the same percentage of variance (approximately 61%) as in previous validation studies, suggesting a significant overlap among different cultures and developmental ages. Thus, these results further corroborate the theoretical and empirical foundation of the construct of MA and its specific components, as well as the ability of the instrument to capture them, as supported by the excellent fit indices obtained through the CFA. Concerning the reliability of the measure, Cronbach's alpha coefficients showed good or excellent values, ranging from .70 to .81. The B-MAS-A thus confirms itself to be a psychometrically sound self-report instrument due to its well-established factor structure, internal consistency, and interpretability.

Our findings appear particularly interesting, as there is a lack of empirical studies investigating the development of mentalization skills, especially concerning emotions, during adolescence. More specifically, among the 3 components of B-MAS-A, processing emerged as the first factor in terms of explained variance (28.38%), probably reflecting the peculiarity of this life period, characterized by the emergence of new and complex emotions, often of such great intensity that they might be challenging to regulate adaptively

Table 3. Partial correlations between subscales of the brief-mentalized affectivity scale for adolescents and dimensions of mental functioning (n=288).

Mentalized affectivity and mental functioning capacities	M (SD)	B-MAS-A		
		Identifying	Processing	Expressing
TAS-20				
Difficulty in identifying feelings	20.99 (6.10)	–.04	–.52***	–.48***
Difficulty in describing feelings	17.50 (4.51)	–.06	–.42***	–.67***
Externally oriented thinking	20.74 (4.65)	–.38***	–.02	–.27***
Global index of alexithymia	59.24 (11.47)	–.15**	–.44***	–.62***
RFQ				
RFQ-C	.56 (.47)	–.10	.18**	–.10
RFQ-U	1.10 (.55)	–.03	–.23***	–.03
ETMCQ				
Trust	4.65 (1.20)	.21***	.15**	.38***
Mistrust	4.47 (1.11)	–.01	–.35***	–.42***
Credulity	3.30 (1.53)	.03	–.26***	–.01
GSE				
General self-efficacy	28.43 (6.09)	.05	.49***	.24***
SDQ				
Emotional symptoms	1.87 (2.07)	.08	–.37***	–.23***
Conduct problems	2.38 (.93)	–.14*	–.29***	–.10
Hyperactivity	4.01 (1.39)	–.12*	–.46***	–.22***
Peer relationship problems	3.13 (1.17)	.02	–.24***	–.33***
Prosocial behavior	3.69 (2.15)	.13*	.06	.13*
Externalizing problems	6.39 (1.95)	–.15**	–.47***	–.21***
Internalizing problems	4.99 (2.65)	.07	–.39***	–.33***
Global index of difficulties	11.39 (3.88)	–.03	–.52***	–.34***

B-MAS-A, brief-mentalized affectivity for adolescents; M, mean; SD, standard deviation; TAS-20, Toronto alexithymia scale-20; RFQ, reflective function questionnaire; RFQ-C, certainty about mental states; RFQ-U, uncertainty about mental states; ETMCQ, epistemic trust, mistrust, and credulity questionnaire; GSE, general self-efficacy scale; SDQ, strengths and difficulties questionnaire; *p<.05; **p<.01; ***p<.001.

(Bailen *et al*., 2019). Adolescence, a phase in which individuals are engaged in the process of developing a "mind of one's own", able to reflect on both the self and the surrounding world in terms of mental states, is strongly associated with an increased risk of anxiety, depressive disorders, and other forms of psychological distress related to difficulties in effectively modulating both positive and negative emotions (Young *et al*., 2019). At the same time, it is important to highlight that affective regulation abilities also undergo a substantial increase during this life stage due to brain and social development (Andrews *et al.*, 2021; Silvers, 2022).

Concerning the second aim of this study, *i.e*., examining the relationship between age and gender in relation to the ability to recognize, elaborate, and express emotions, several meaningful findings emerged (Table 2). In summary, our results show that age appears to positively impact the ability to identify emotions; this ability is also stronger among female adolescents compared to males. On the other end, initially, male teenagers outperform females in emotional expression, but as development progresses, there is a reversal of this trend, with females exhibiting better emotional expression skills.

Finally, the ability to modulate emotions appears to be stronger in males. Taken together, these results appear consistent with existing literature and can be understood considering various sociocultural factors. Female subjects have already been found to possess a greater tendency to reflect on their emotional states (Mankus *et al*., 2016). This tendency is particularly evident among adolescent girls, who also exhibit a superior ability to employ a broader emotional vocabulary for describing their emotions (Dylman *et al*., 2020). Conversely, the fact that male subjects obtained higher scores in processing skills could be attributed to societal stereotypes associated with masculinity, leading to the expectation of a "stoic" and self-assured attitude towards the expression of emotions, to which adolescents appear to be particularly vulnerable (Oransky & Marecek, 2009).

Male teenagers may, therefore, view vehement and challenging-to-regulate emotional states as less socially desirable. Consequently, they could tend to self-attribute greater abilities in this domain when responding to a self-report instrument like the B-MAS-A. Moreover, several studies have consistently shown that adolescent girls tend to experience higher emotional intensity compared to boys, regarding both positive and negative emotions such as anger, sadness, and shame (for a review, see Bailen *et al*., 2019). Hence, it is plausible to hypothesize that adolescent females may perceive themselves as being more attentive to identifying their emotional processes, given the higher complexity and intensity of their emotions. Simultaneously, they may see themselves as being less proficient in effectively processing and regulating these states and, especially in early adolescence, as less able to convey the complexity of their affective life to others. Our results suggest that gender and age play distinct roles in influencing emotional behavior among adolescents and provide valuable information to which both researchers and clinicians can refer.

The third and final aim of this study was to verify the validity of the B-MAS-A by examining the relationships between MA and various aspects of psychological functioning, including mentalization abilities and alexithymia (assessed with the RFQ and the TAS-20), epistemic trust and its distortions (assessed with the ETMCQ), perceived self-efficacy (assessed with the GSE), and psychological resources and difficulties (assessed with the SDQ). Results revealed that the B-MAS-A exhibits good construct validity (partial correlations with reflecting functioning and alexithymia are shown in Table 3), at the same time serving as an instrument that offers a unique perspective and enhances our understanding of emotional dynamics. Scores at the TAS-20 show, in fact, a significant correlation with the B-MAS-A, particularly for what concerns the processing and expressing subscales. The identifying subscale of the B-MAS-A, on the other hand, displayed a smaller, albeit significant, correlation with the overall level of alexithymia. Initially, it may seem surprising that the overall level of alexithymia showed only modest correlations with the ability to recognize and reflect on one's emotional states. However, it is important to note that the identifying component of the B-MAS-A not only describes the capacity for emotional labeling but also the comprehension of emotions within the framework of one's life history. Thus, while this facet of MA undeniably pertains to aspects related to the construct of alexithymia, it concurrently unveils a nuanced dimension that could be more difficult to capture using instruments like the TAS-20. The identifying subscale of the B-MAS-A is specifically aimed at assessing the tendency to turn one's attention to how past experiences influence one's inner affective world in its complexity, as well as the process of assigning and re-assigning meaning to emotions, aspects that could be particularly relevant to measure in the context of psychotherapeutic interventions.

Looking in more detail at the correlations between the components of the B-MAS-A and scores at the RFQ, it is worth noting that the only dimension of MA that exhibited correlations with reflective functioning dimensions was the one related to emotional processing. More specifically, a positive correlation with the scale measuring certainty about one's and others' inferred mental states (RFQ_C) emerged, as well as a negative one with uncertainty about them (RFQ_U). That is, a higher level of subjective confidence about the fact that behaviors are driven by underlying mental states promotes a more efficient capacity to modulate emotions (for instance, using cognitive strategies), while a lack of such confidence could be related to difficulties in affective regulation. Given the limited number of studies that have empirically explored the development of mentalization abilities in adolescents, this finding is particularly intriguing and may provide information that can inform clinical practice. It suggests that the ability to regulate the turbulent nature of one's emotional life during adolescence, rather than solely recognizing internal states or expressing them, is most strictly intertwined with the understanding that affective experiences are influenced by one's mental representations. This idea is further sustained by the lack of a significant correlation between subscales of the RFQ and the subscale Identifying of the B-MAS-A. This absence suggests that, to cultivate a broader capacity for interpreting behaviors in light of intentional mental states (that is, to foster mentalization abilities in general), therapeutic interventions must prioritize not just the development of skills for identifying and labeling affects but also, perhaps mostly, focus on fostering the adolescents' capability to modulate the intensity of their affects. In other words, by helping them develop a deeper understanding of the complex interplay between their thoughts, emotions, and mental representations, therapists can empower teenagers to navigate their emotional landscapes more effectively, promoting psychological well-being and resilience with long-lasting positive effects on adolescents' overall health and contributing holistically to their personal growth.

The 3 subscales of the B-MAS-A also demonstrated significant correlations with other dimensions of psychological functioning, showing good levels of criterion validity (Table 3). Epistemic trust (as assessed through the ETMCQ) exhibited positive correlations with all 3 B-MAS-A subscales. This association seems to suggest that the ability to reflect on one's emotional life, modulate its intensity, give it meaning, and express it (both to others and internally) promotes (and is promoted by) the acquisition of information

from interpersonal exchanges while balancing trust and epistemic vigilance. This is a task that can be challenging as well as vital in adolescence, a period when individuals must learn to assess the reliability of multiple epistemic sources (*e.g.*, adult figures and peers). The existing literature (Brenning *et al*., 2002; Llamas-Díaz *et al*., 2022; Resurrección *et al*., 2014; Young *et al*., 2019) has already demonstrated that difficulties associated with emotional dysregulation serve as a transdiagnostic marker in psychopathology, particularly during development. At the same time, increasing the capacity to identify, regulate, and express emotions often stands as a crucial objective in psychotherapy. The observed positive correlation between the 3 B-MAS-A scales and epistemic trust emphasizes the necessity of fostering a healthy and adaptive ability in patients to utilize interpersonal communications to effectively achieve this goal. This aspect appears closely intertwined with constructs such as therapeutic alliance and responsiveness and should be further explored in future studies. The strongest correlation with epistemic trust was observed with the expressing subscale: an interesting finding consistent with the theoretical premises of the study. The theory proposed by Jurist (2018) suggests that emotional expression represents the final stage in the process of transitioning from experiencing "aporetic emotions" (*i.e*., affective states that are difficult to give form and meaning to) to fully mentalizing affective experiences. This factor is heavily influenced by interpersonal dynamics, which during adolescence play a central role as young individuals explore new skills and construct their identities (Kerpelman *et al*., 2012). Epistemic trust may therefore play a pivotal role in fostering comprehensive mentalization skills during the teenage years. It serves as a catalyst for individuals to explore novel perspectives of themselves, their internal experiences, and the interpersonal world that surrounds them. By cultivating epistemic trust, individuals can embrace the opportunity to acquire new insights and engage with the world in more adaptive and enriching ways. This process not only expands their understanding but also empowers them to navigate their lives with greater insight and resilience, potentially reducing their psychological suffering.

Consistent with these observations, our results also showed that the presence of an excessive and pervasive vigilance towards knowledge conveyed through interpersonal exchanges (*i.e.*, epistemic mistrust) seems associated with greater difficulties in both regulating emotional states and expressing them. These difficulties can contribute to increased interpersonal isolation and alienation during adolescence, potentially leading to higher psychological distress and impairing the individual's ability to regulate emotions. If the presence of high levels of epistemic mistrust in adolescents is not taken into account, the effectiveness of the therapist's interventions during treatment might be hampered or not sufficiently generalized to different interpersonal contexts outside the therapeutic room. Additionally, the results of the present study show that high levels of epistemic credulity (*i.e*., an indiscriminate reliance on socially transmitted information, associated with excessively low levels of epistemic vigilance) are negatively correlated with the ability to modulate emotions, substantiating what was highlighted by Jurist (2018) on a theoretical level and corroborated in subsequent empirical studies (Liotti *et al.*, 2023). This often overlooked yet profoundly maladaptive strategy leaves individuals in a state of passivity, where they become overly dependent on external sources for information and knowledge while lacking the ability to critically process it and utilize it in an independent, self-enhancing, and agentic manner. Adolescents with high levels of epistemic credulity might thus have an impaired capacity to adaptively navigate the complexities of their interpersonal and intrapersonal lives and struggle to utilize both social experiences and cognitive abilities to develop adaptive strategies to regulate their emotional states. In essence, epistemic credulity may act as a barrier to their growth and self-empowerment, limiting their potential to engage actively with their experiences and shape their own understanding of the world. Overall, the correlations between the 3 subscales of the ETMCQ and those of the B-MAS-A indicate that fostering MA in adolescent patients could prove to be particularly beneficial in psychotherapy with adolescents, enabling them to adaptively utilize information conveyed by the epistemic source of the therapist. This process can give rise to a virtuous circle, promoting the development of new ways to interpret and experience emotions, as well as new schemas and perspectives concerning oneself, others, and the world.

The lack of correlation between the identifying subscale of the B-MAS-A and the 2 scales that measure distortions of epistemic trust (*i.e.*, mistrust and credulity), presents an intriguing finding. The theoretical framework within which the construct of epistemic trust was developed posits that these distortions emerge due to the presence of complex trauma experiences, which entail exposure to multiple traumatic events during childhood, often occurring within the interpersonal realm (Luyten *et al*., 2020). It is possible to speculate that these experiences have led to multifaceted outcomes in terms of the capability and inclination to recognize one's emotional experiences. For instance, a child or adolescent with a history of complex trauma might tend to focus on identifying the emotions of others, possibly to avoid reliving certain traumatic events. Consequently, they may perceive themselves as inadequate at identifying their own emotional states. On the other hand, in some instances, experiences of complex trauma could lead to an increased inclination for the individual to reflect on his own emotional experiences, perhaps because they are characterized by heightened intensity and represent a source of confusion and distress. The lack of correlation between the identifying subscale of the B-MAS-A and the mistrust and credulity subscales of the ETMCQ could be explained by these inter- and intra-individual fluctuations through the mediation of traumatic experiences.

In this study, higher abilities to process and express emotions were also correlated with a higher level of perceived self-efficacy. This finding emphasizes the importance of addressing various components of MA within psychotherapeutic interventions with teenagers. Increased self-efficacy has been associated with higher levels of optimism, better self-regulation skills, greater self-esteem, and enhanced orientation toward the future. Previous research has also linked enhanced levels of self-efficacy with a greater sense of mastery, personal growth, and self-acceptance in the adolescent population (De Caroli & Sagone, 2014), as well as resilience (Sagone & De Caroli, 2013), positive thinking, and positive affects (Caprara *et al*., 2006). However, it is interesting to note the absence of significant correlations between the identifying subscale, which involves reflecting on both present and past experiences, and self-efficacy. During adolescence, individuals engage in a significant reevaluation of their life history, particularly experiences with high emotional value, such as attachment experiences (Allen & Tan, 2016). As this reevaluation is an ongoing process during this stage of life, the tendency to introspect and identify potentially conflicting affective drives (and interpret them in light of one's past) may yield multifaceted and ambivalent outcomes, sometimes ending up decreasing the sense of perceived efficacy.

Finally, for what concerns the relationships between MA components and psychological/behavioral strength and difficulties, our results showed that good expression and emotional processing

skills appear to be protective factors against the development of internalizing disorders. Additionally, it is important to emphasize that the identifying subscale, along with the expressing one, positively correlates with the tendency to engage in prosocial behaviors. Such a tendency plays a significant role in promoting adolescent development and well-being (Crone & Achterberg, 2022), as it fosters the establishment of reciprocal relationships and mutual support, essential elements in a life phase in which individuals have a heightened desire to affiliate with groups and form interpersonal bonds characterized by intense emotional exchanges. Indeed, difficulties in building healthy and collaborative relationships during this time can have detrimental effects on teenagers' social and neurobiological development (Sebastian *et al*., 2010). Moreover, the possibility of building a therapeutic relationship based on cooperation appears to be a central element in determining both the increase of mentalizing abilities and the outcome of psychological interventions, especially in moments of impasse (Monticelli & Liotti, 2021; Tryon *et al*., 2018). Furthermore, the ability to reflect on one's affective states and attribute meaning to them appears to be a protective factor against the development of externalizing symptomatology, as all dimensions of MA exhibited significant negative associations with this factor. Once again, this underscores the importance of fostering this capacity in adolescents within the context of psychotherapy, as the presence of externalizing disorders during adolescence has a strong continuity into adulthood (Petersen *et al*., 2015; Speranza *et al*., 2023) and is linked to various issues, including difficulties in academic and work settings (Cherkasova *et al*., 2021), alcohol and substance use (Englund & Siebenbruner, 2012; Meque *et al*., 2019), personality disorders, particularly antisocial disorder (Copeland *et al*., 2009), and suicidal tendencies (Cherkasova *et al*., 2021; Verona *et al*., 2004). Taken together, our findings underscore the complexity of emotional development during adolescence, as well as the need to consider it within a broader context, always referring to the interplay between other mental abilities, such as the one to develop intimate and trusting relationships, the use of defense mechanisms, and overall mentalization abilities, as suggested by the PDM-2 (Lingiardi & McWilliams, 2017; Tanzilli *et al*., 2021).

Limitations

This study has some limitations that should be acknowledged. The primary one concerns the exclusive use of self-report questionnaires. While these instruments offer the advantage of assessing multiple dimensions of functioning quickly, they are susceptible to bias, particularly during adolescence, when variables like social desirability can significantly influence individuals' self-perception of certain characteristics. Therefore, it is essential to consolidate the findings through research designs employing alternative assessment methods, such as observational or neuroimaging ones. Additionally, given the gaps in our understanding of how the ability to reflect on mental states (affective or otherwise) develops throughout adolescence, it would be crucial to implement longitudinal research designs. This would allow for the examination of both the test-retest reliability of the instrument and the effects of specific variables (*e.g*., life experiences, psychotherapy) on MA (Lingiardi & McWilliams, 2017).

Conclusions

The results of this study underscore the excellent psychometric properties of the B-MAS-A. The 3-factor structure was successfully replicated in the validation study on the Italian population of adolescents, and the 3 subscales of the instrument demonstrated good reliability and construct validity. The brevity and ease of administration of the B-MAS-A make it a practical tool for both clinical and research settings, enabling efficient measurement of MA among adolescents. Moreover, such characteristics make it particularly suitable for repeated measurements, a factor that could be of significant value, particularly in clinical practice. The ability to quantifiably assess MA over time can provide valuable insights into the effectiveness of interventions aimed at promoting psychological well-being and overall adaptation. By capturing changes in the identified dimensions of MA, the B-MAS-A can serve as an outcome measure, offering a measurable indicator of progress in therapeutic interventions. Further research should explore the longitudinal use of the B-MAS-A to assess the stability and development of MA throughout adolescence. Additionally, the examination of the instrument's sensitivity to change and responsiveness to different interventions could provide valuable insights into its clinical utility and its potential as a therapeutic tool. Overall, the B-MAS-A seems to represent a valuable instrument in promoting a more comprehensive understanding of MA among adolescents and enhancing clinical practice.

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